

SAA09VE333-001
REV. A
B/L: 25C.03
SYS: HOP HOIST

NOV 20 1995

Critical Item: Hoist (4)

Find Number: -39

Criticality Category: 2

SAA No: 09VE333-001

System/Area: SRB HDP Tensioner
Hoist/MLP

NASA

Part No: 79K24088-39

PMN/ H77-1227-01/02

Name: Hoist

Mfg/ Budgit

Part No: 261SR

Drawing/ 79K24088

Sheet No: 1

Function: The Budgit 261SR hoist is used during the installation and removal of the Blast Tensioner and Blast Shield.

Critical Failure Mode:

- Gears between the brake and chain disengage. FM No. 09VE333-001.001
- Brake failure due to structural failure of brake components. FM No. 09VE333-001.002

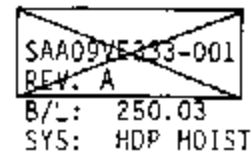
Failure Cause: Component structural failure.

Failure Effect: Load drops causing damage to flight hardware.

Design:

Acceptance Rationale

- The hoist is an off-the-shelf item manufactured by Budgit and is designed to handle 1000 pounds.
- Steel gears
- Splined on shafts
- Heat-treated aluminum alloy hoist frame
- Steel chain guide
- Self-adjusting Weston-type load brake
- The hoist, at rated load (1000 pounds), has a 5:1 safety factor.
- All gearing design is based upon AGMA standards for durability, strength.



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Hoist (4) -29 (Continued)

Test:

- DMRS File VI requires the annual performance of a rated load test.
- The hoists were proof load tested at 125% of the rated load during acceptance tests.

Inspection:

- Visual inspection of the hoist assembly for evidence of corrosion, cracks, overloading, or wear is performed pre-operationally per OMI B5303.
- Visual inspection of the hoist assembly for evidence of corrosion, cracks, overloading, or wear is performed quarterly per OMI B2150.
- Visual inspection of the hoist gearing and brake assembly for evidence of cracks, broken teeth, worn linings and damage is performed annually per OMI B2150.

Failure History:

- No failure history for the critical failure mode was found in GIDEP or the PRACA data base.

Operational Use:

- The hoists were rated at 1000 pounds, and the maximum load lifted is the Heater Umbilical at 925 pounds.
- The hoist safety factor is 5.4:1 while lifting the Heater Umbilical.